

# Hildesheim Guidelines for the Use of Digital Techniques in the Conservation-Restoration and Presentation of Fragments



Nearly all surviving works of art have become fragments in the course of their history in various ways and with differing consequences. However, the incompleteness of these works today, with the resulting historical and aesthetic qualities, is rarely recognized and referred to as such. These guidelines address the ways in which we deal with fragments. How are these best understood and presented? Are integrations necessary for this purpose, and if so, in what form? The development and increasing importance of digital methods in conservation-restoration and in the mediation of fragmentary art and cultural property require an update of previous basic principles. These guidelines aim to help identify opportunities and risks in order to use digital means for the benefit of original fragments.

## 1. Basic Principles

Analog and digital processes can complement each other in researching, preserving and communicating fragments. They are fundamentally on an equal footing.

For both analog and digital data, it is necessary to ensure the verifiability, transparency and unlimited accessibility of all records. Verified findings and subjective interpretations must remain clearly distinguishable, even for laypersons.

The changeability of digital data is particularly high. Therefore, data maintenance and backup are essential for tracking digital data edits.

Resources intended for the preservation and maintenance of fragments should not be reallocated to digitization projects if such projects do not meet the above objectives.

Digital simulations can increase the audience's appreciation of the fragment. However, the perceptibility of the fragmented original must not be relegated to the background. The audience must always be given the opportunity to view it without digital interpretations or aids.

The use of digital techniques in the virtual presentation and mediation of fragments should be aimed at sustainability, for an economical consumption of energy and other resources.



## 2. Possibilities and Chances of Digital Reconstruction

### 2.1 Improvement of Communication and Mediation

- Digital reconstructions can improve access to research results and promote exchange between experts from different disciplines.
- Digital reconstructions can vividly convey design phases, offer insights into art technology, the history of artefacts and their restoration, and explain conservation issues.
- Digital information about the art and cultural history of fragments is available to laypersons and experts alike, regardless of location. Through interactive features, it is possible to stimulate the interest of previously hard-to-reach social groups in the multifaceted significance of fragments.

### 2.2 Improvement in the Conservation-Restoration of Fragments

- The use of digital techniques can significantly reduce invasive measures in the historical substance during conservation-restoration investigations and measures. Thus, a key task remains the preservation of the surviving substance through monitoring, maintenance, and care.

- Digital techniques can improve the precision, comparability and accessibility of conservation investigations and documentation.
- The correction of former restorations (so-called de- and re-restorations) and the associated, almost always detrimental interventions in the historical substance, can largely be replaced by virtual visualizations and reconstructions based on them, e.g. of different states of an object over the centuries.
- A time-bound interpretation of the fragment through retouching, re-integrations and partial reconstructions can be dispensed with if digital techniques are used in its presentation. If no new materials are introduced into the original, the conditions for its later examination are also improved.

### 3. The Limits of Digital Reconstruction

- Digital reconstructions also contain subjective elements. In their design, they are bound to the technical possibilities and tastes of their time and are therefore usually short-lived. For this reason, it is essential to show respect for the fragmentary original.
- In the representation of historical materials and their surface design, digital reconstruction still has its limits. This distance from reality in digital visualizations of materiality and chromaticity must be explained.
- The susceptibility of digital data to manipulation can lead to virtual representations taking on a life of their own and becoming falsified. Creators of digital reconstructions as well as interpreters and directors of more advanced digital simulations must resist this temptation. Fundamentally, it is necessary to employ critical tools to revise and mitigate data misuse.
- Targeting digital reconstructions to non-specialist audiences must not diminish their scientific seriousness.
- In the case of hybrid concepts and measures for the conservation-restoration of fragments, it is necessary to evaluate which advantages analog or digital techniques have in individual cases and how they can be profitably combined.

### 4. Desiderata

Previous experience with using digital techniques in studying, preserving, and communicating fragments demonstrates the need to improve interdisciplinary collaboration. This results in the following desiderata:

- Digital techniques in the conservation-restoration and presentation of fragments must be included in teaching and continuing education as well as in interdisciplinary research. Promoting project-related interdisciplinarity in a targeted manner can lead to substantial improvements.
- Internationally valid digital documentation standards are urgently needed.
- An internationally binding terminology of the digital in conservation-restoration is a prerequisite for fruitful collaboration. The development of a multilingual glossary therefore remains an essential task.

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Compiled by Ursula Schädler-Saub, incorporating the contributions of colleagues involved in the preparation and implementation of the international conference by the HAWK University of Applied Sciences and Arts in Hildesheim (Faculty of Architecture, Engineering and Conservation and the Hornemann Institute) in cooperation with the German National Scientific Committee for Conservation-Restoration of ICOMOS and the Verband der Restauratoren e. V. (Association of Restorers e.V.) "The Fragment in the Digital Age – Opportunities and Limitations of New Conservation-Restoration Techniques" at the HAWK, 7–8 May 2021.

## Appendix

A brief explanation of the term fragment:

These guidelines address the fragment as a piece of a lost whole that has been fractured over time for a variety of reasons. A special form of fragment is the torso, an incomplete statue with missing limbs, often with a missing head. Also noteworthy are spolia, parts torn from their original context (mostly architecture and architectural sculpture), and presented as relics of the past in a new context.

Fragments arise gradually through natural aging and degradation or suddenly through natural disasters. Directly or indirectly, however, they are created primarily by human hands. Ideological reasons should be mentioned here, leading to war, vandalism and iconoclasm. Changes in use and contemporary taste, combined with redesigns, reinterpretations and decontextualization, also create fragments. They are sometimes supplemented with artistic revisions and restorations, and sometimes appreciated and presented just as they are for reasons due precisely to their fragmentary character. Interiors of architectural monuments as well as museum collections bear witness to this. The debate about whether and how a fragment should be re-integrated runs through cultural history; it is still topical.

A fragment can also be something unfinished from the beginning, a work that was deliberately not completed by its creator due to external conditions or artistic intention. This intentional fragment is characteristic of modern and contemporary art. It also influences the presentation concepts of fragments created over time, but is not intended to be the subject of these guidelines.

Reference to principles and documents on the subject:

There is consensus on the principles that underlie these guidelines: the irreplaceability of the original as a source of knowledge, even if fragmentary; the original as a historical document that includes later revisions; the commemorative and present-day values of the original; the preservation of the material, historical, and aesthetic authenticity of the original; the fragment and its potential unity; the need for a clear distinction between fragmented original and re-integration; the importance of scientific documentation and its long-term public accessibility. These principles are based on the theories of restoration and monument preservation put forward in particular by Alois Riegl (1903), Georg Dehio (1901, 1905) and Cesare Brandi (1963). They are explained in international charters and documents of ICOMOS, most notably the Venice Charter (1964), the Burra Charter (1979–2013), and the Nara Document on Authenticity (1994), as well as in the ICOM Code of Ethics (1986–2004). The concepts of "original," "fragment," and "authenticity" used here are based on these foundations.

The present guidelines refer to documents on the preservation and communication of art and cultural property using digital techniques, the detailed explanations of which are not repeated here. In particular, they include: the London Charter (2006), the Principles of Seville (2011), the Statement of the German Cultural Council on Cultural Heritage and Digitization (2016). The critical statement of the Koldewey Society (2016) on the use of digital technologies for war-damaged cultural monuments provides important basic ethical considerations for these guidelines, although its focus is different.

No extension of these guidelines (which are dedicated to the "classical" fragment) is made to ethical issues in the preservation of contemporary art due to the diverging issues and terminology. Comparisons with the requirements of ephemeral art or "time-based art" such as video and performance art (among others) can be thought-provoking, so an additional document on this topic is expressly welcomed.